

CLAIMS

1. A method comprising steps of:

providing a first quantity of dibasic acid and a second quantity of polyvinyl alcohol;

disposing the first and second quantities in a mold; and

applying a pressure and a temperature to the first and second quantities that are sufficient to cause polymerization and substrate formation.

2. The method of claim 1, wherein the dibasic acid comprises adipic acid.

3. The method of claim 1, further including the step of disposing at least one polishing agent in the mold before the step of applying.

4. The method of claim 1, further including the step of disposing at least one filler in the mold before the step of applying for controlling at least one of modulus

and coefficient of expansion.

5. The method of claim 1, wherein the step of disposing the first and second quantities in a mold further includes disposing the first and second quantities in a patterned mold.

6. The method of claim 1, wherein the step of disposing the first and second quantities in a mold further includes disposing the first and second quantities in an electropolished mold.

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7. A utility pad construction method comprising steps of:

providing a reaction mixture of a first quantity of dibasic acid, a second quantity of urea and a third quantity of at least one hydroxylated polymer;

disposing the reaction mixture in a mold; and

applying a pressure and a temperature to the reaction mixture that are sufficient to cause polymerization and substrate formation.

8. The method of claim 7, wherein the dibasic acid comprises adipic acid.

9. The method of claim 7, further including providing the reaction mixture with at least one polishing agent before the step of applying.

10. The method of claim 7, further including providing the reaction mixture with at least one filler before the step of applying for controlling at least one of modulus and coefficient of expansion.

11. The method of claim 7, wherein the step of disposing the reaction mixture in a mold further includes disposing the reaction mixture in a patterned mold.

12. The method of claim 7, wherein the step of disposing the reaction mixture in a mold further includes disposing the reaction mixture in an electropolished mold.

13. The method of claim 7, wherein the hydroxylated polymer comprises polyvinyl alcohol.

14. A utility pad construction method comprising steps of:

disposing layers of reactants in a mold, one of the layers comprising polyvinyl alcohol and the other of the layers comprising a dibasic acid;

applying a pressure and a temperature to the reactants that are sufficient to cause polymerization and substrate formation.

15. The method of claim 14, wherein the dibasic acid comprises adipic acid.

16. The method of claim 14, further including the step of providing the layer of dibasic acid with at least one polishing agent before the step of applying.

17. The method of claim 14, further including the step of providing the layer of dibasic acid with at least one filler before the step of applying for controlling at least one of modulus and coefficient of expansion.

18. The method of claim 14, further including the

step of providing the layer of polyvinyl alcohol with a cross-linking agent before the step of applying.

19. The method of claim 14, wherein the step of disposing layers of reactants in a mold further includes disposing the layers in a patterned mold.

20. The method of claim 14, wherein the step of disposing layers of reactants in a mold further includes disposing the layers in an electropolished mold.